

FIG. 1

2/30

ROOT DIRECTORY 100

SUBDIRECTORY 101

DVD_RTR DIRECTORY (DVD_RTAV) 102

DATA FILE 103

RTR. IFO (VR_MANGR. IFO; NAVIGATION DATA) 104

STREAM. IFO (SR_MANGR. IFO/SR_MANGR.BUP)
(NAVIGATION DATA) 105

SR_PRIVT. DAT/SR_PRIVT. BUP (NAVIGATION DATA UNIQUE TO
APPLICATION) 105a

STREAM. VRO (SR_TRANS. SRO)
(STREAM DATA) 106

RTR_MOV. VRO (VR_MOVIE. VRO: MOVIE REAL-TIME VIDEO
OBJECT) 107

RTR_STO. VRO (VR_STILL. VRO; STILL PICTURE REAL-TIME
VIDEO OBJECT) 108

RTR_STA. VRO (VR_AUDIO. VRO: AUDIO OBJECT OF
POSTRECORDED AUDIO, ETC.) 109

SUBDIRECTORY 110

VIDEO_TS (VIDEO TITLE SET) 111

AUDIO_TS (AUDIO TITLE SET) 112

SUBDIRECTORY FOR SAVING COMPUTER DATA 113

FIG. 2

3/30

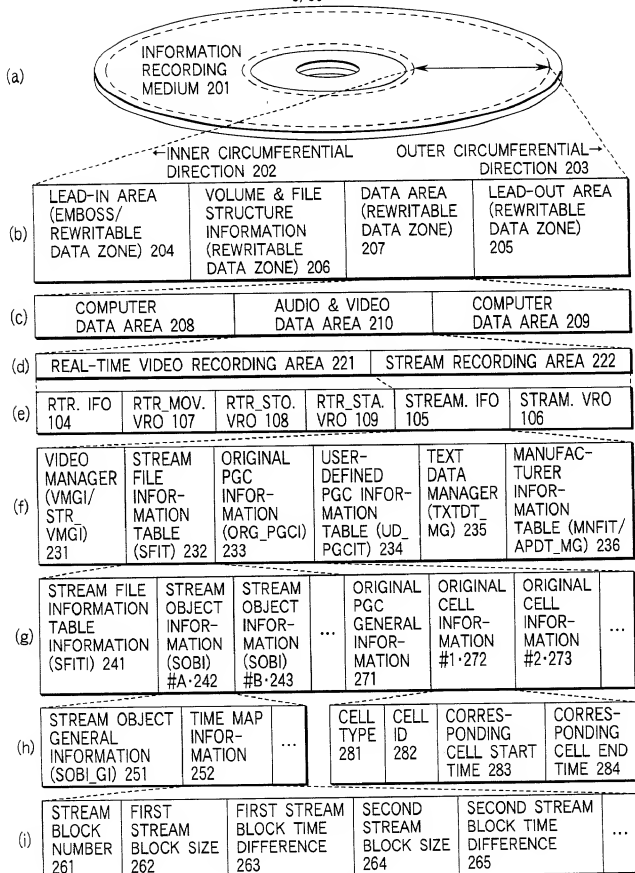


FIG. 3

4/30

2 ECC BLOCKS (32 SECTORS) =
1 STREAM OBJECT UNIT (SOBU)

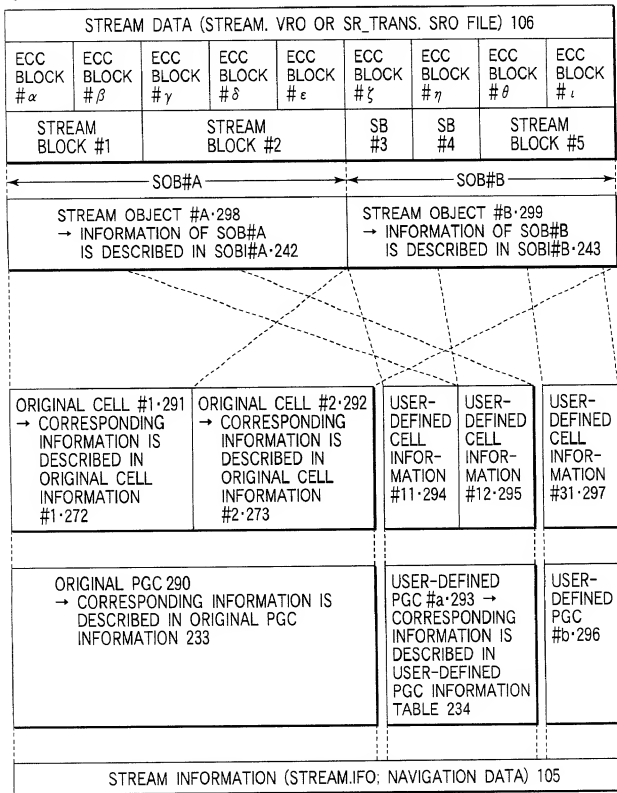


FIG. 4

5/30

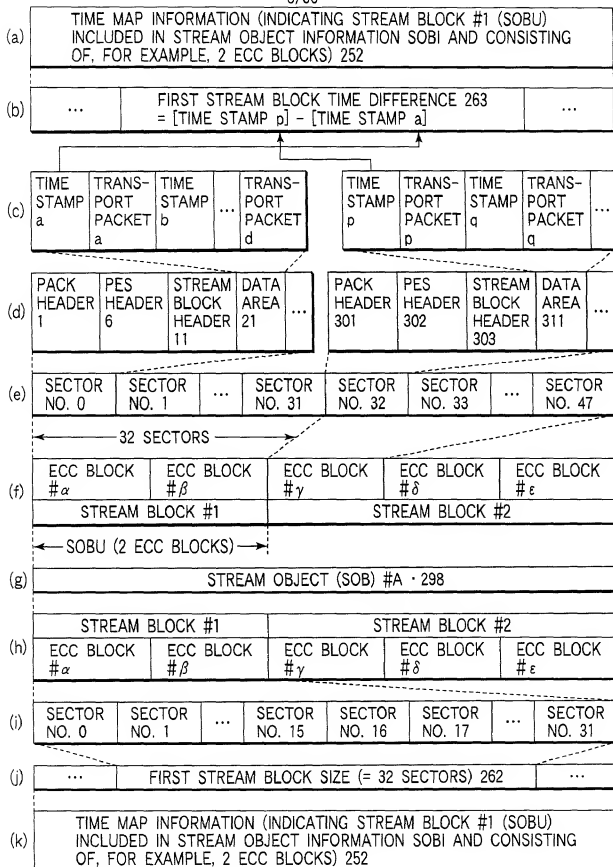


FIG. 5

6/30

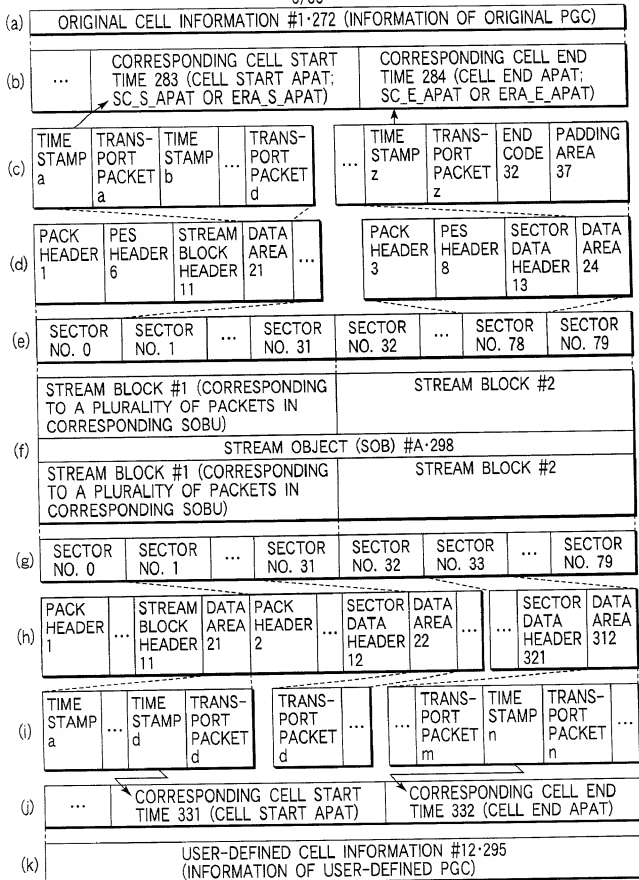


FIG. 6



FIG. 7

8/30

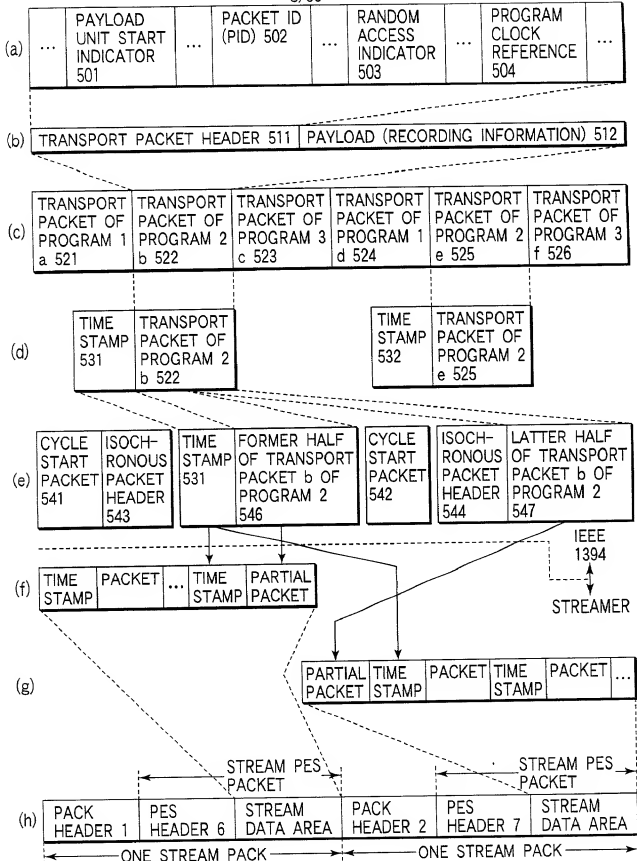


FIG. 8

9/30
VIDEO PLAYBACK TIME →

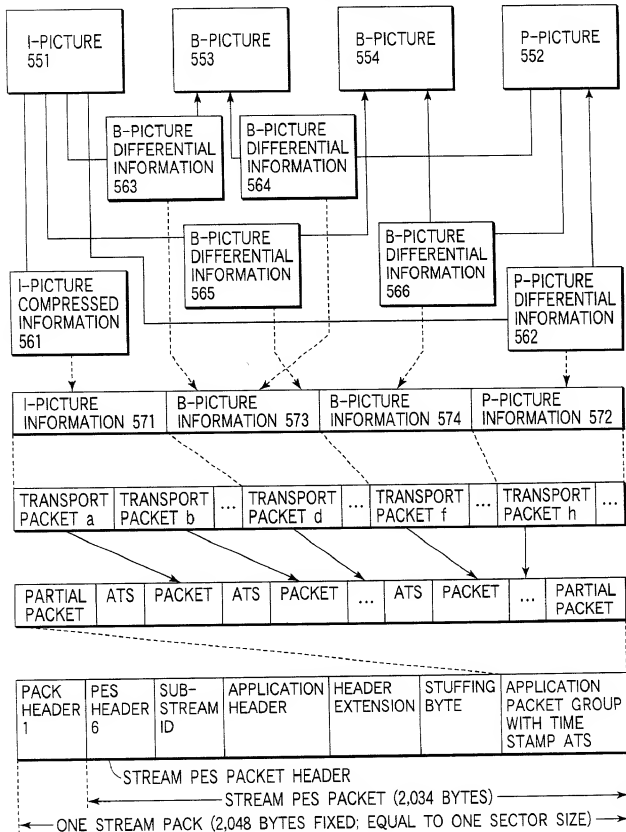


FIG. 9

10/30

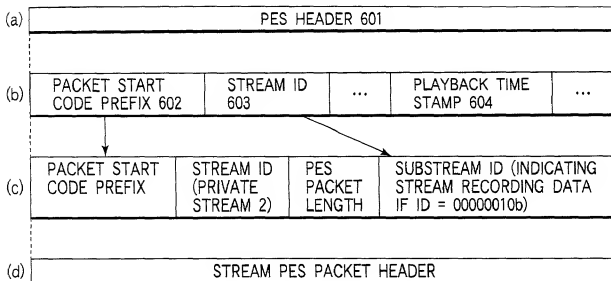


FIG. 10

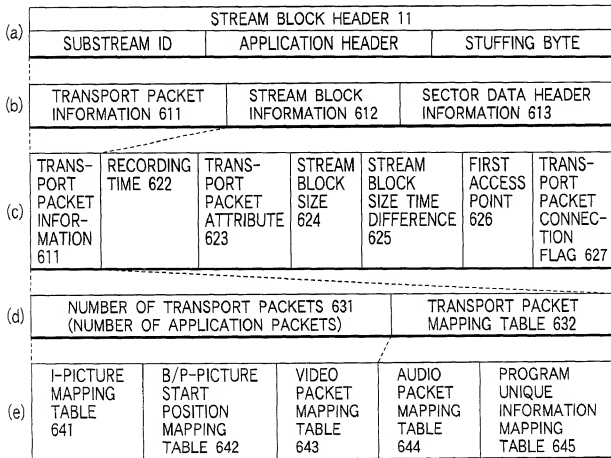


FIG. 11

11/30

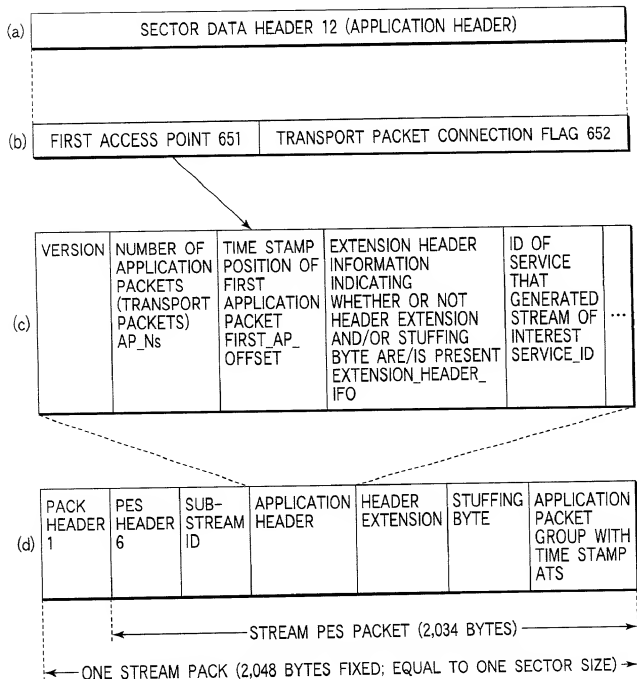


FIG. 12

12/30

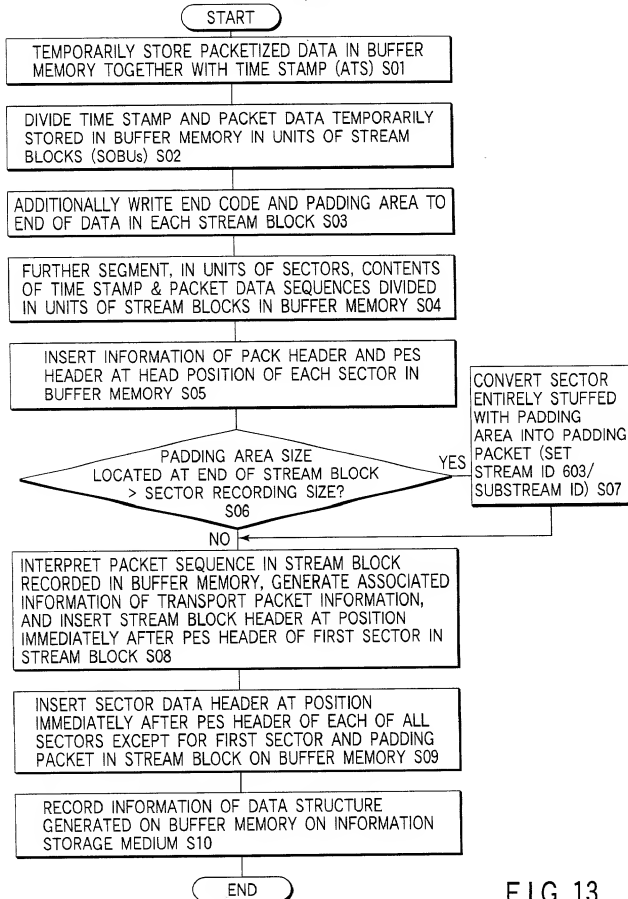


FIG. 13

13/30

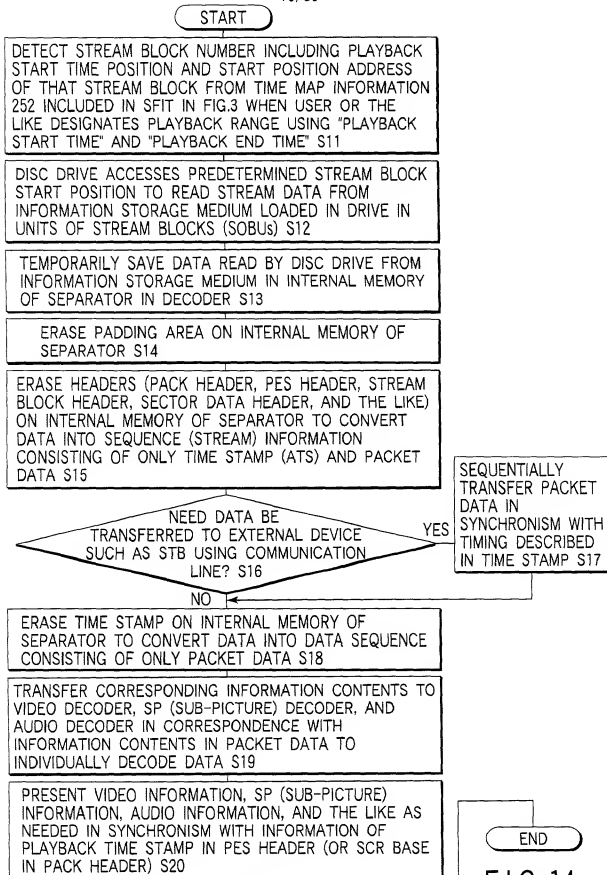


FIG.14

14/30

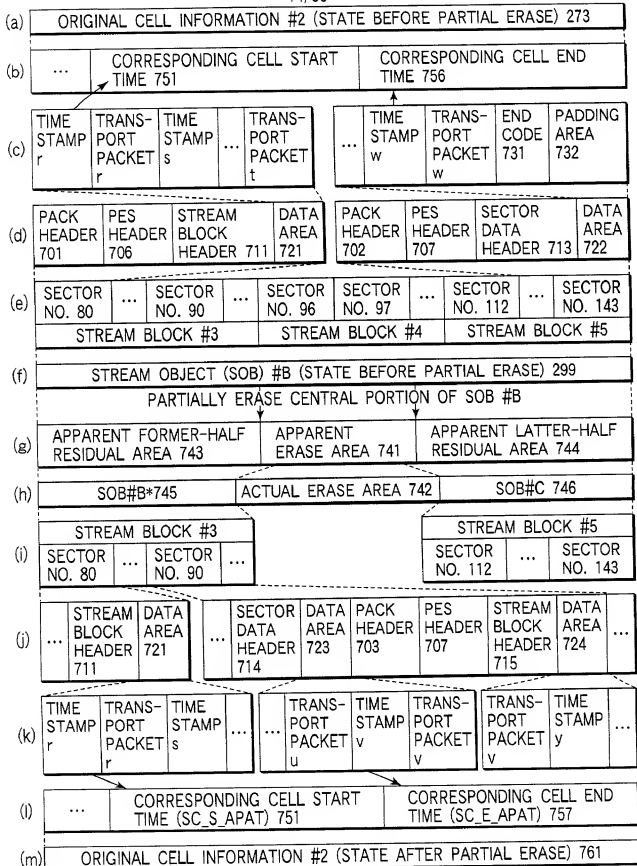


FIG. 15

15/30

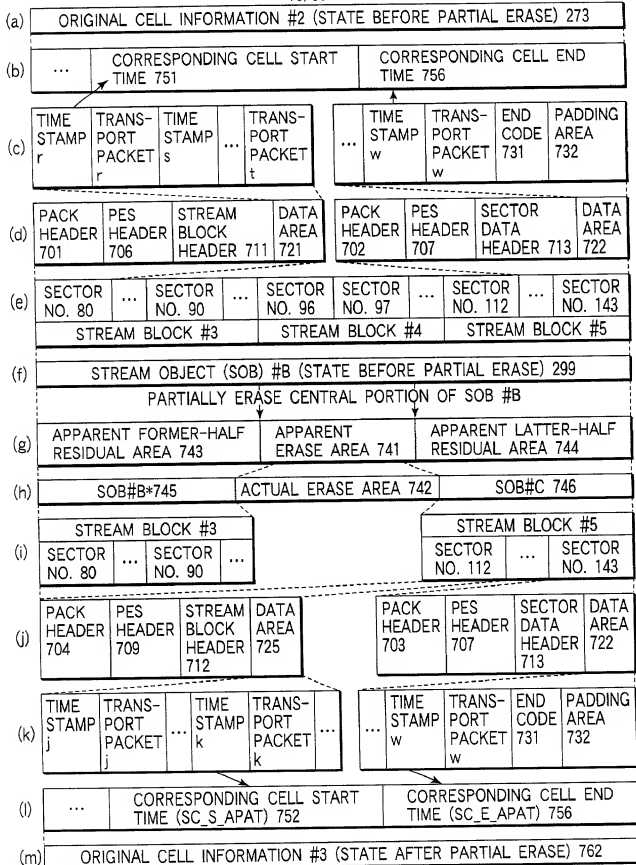


FIG. 16

16/30

START

USER OR THE LIKE DESIGNATES PARTIAL ERASE RANGE USING TIME INFORMATION OR THE LIKE S21

SEARCH FOR STREAM BLOCK (OR SOB OR ONE OR MORE SOBUs) COMPLETELY INCLUDED IN ERASE RANGE ON THE BASIS OF TIME MAP INFORMATION, AND ERASE FOUND STREAM BLOCK (TRANSPORT PACKET OR APPLICATION PACKET) S22

SEGMENT STREAM OBJECT (SOB) INTO FORMER- AND LATTER-HALF RESIDUAL AREAS CORRESPONDING TO PARTIAL ERASE RANGE, GENERATE SOB INFORMATION (SOBI) OF NEW SOB'S GENERATED BY THIS SEGMENTATION, AND TEMPORARILY STORE GENERATED SOBI IN WORK MEMORY IN MPU. IN THIS CASE, ALSO GENERATE TIME MAP INFORMATION FOR NEW SOB BY POSTING CORRESPONDING PORTION IN TIME MAP INFORMATION RECORDED IN SOB BEFORE SEGMENTATION S23

GENERATE ORIGINAL CELL INFORMATION FOR NEWLY DEFINED SOB (ADJUST CELL START TIME TO PARTIAL ERASE END TIME DESIGNATED BY USER OR THE LIKE, OR ADJUST CELL END TIME TO PARTIAL ERASE START TIME DESIGNATED BY USER OR THE LIKE) S24

REWRITE TIME MAP INFORMATION IN ORIGINAL SOB INFORMATION (REWRITTEN TO INFORMATION OBTAINED BY REMOVING "FIELD OF ACTUAL ERASE AREA" AND "FIELD OF NEWLY DEFINED SOB AREA" FROM ORIGINAL TIME MAP INFORMATION) S25

CHANGE TIME RANGE OF ORIGINAL CELL CORRESPONDING TO SOB, TIME MAP INFORMATION OF WHICH HAS BEEN REWRITTEN (ADJUST CELL START TIME TO PARTIAL ERASE END TIME DESIGNATED BY USER OR THE LIKE, OR ADJUST CELL END TIME TO PARTIAL ERASE START TIME DESIGNATED BY USER OR THE LIKE) S26

REWRITE STREAM.IFO RECORDED IN INFORMATION STORAGE MEDIUM IN CORRESPONDENCE WITH STREAM INFORMATION (STREAM.IFO) CHANGED IN WORK MEMORY OF MPU S27

REWRITE VOLUME & FILE STRUCTURE INFORMATION RECORDED ON INFORMATION STORAGE MEDIUM S28

END

FIG. 17

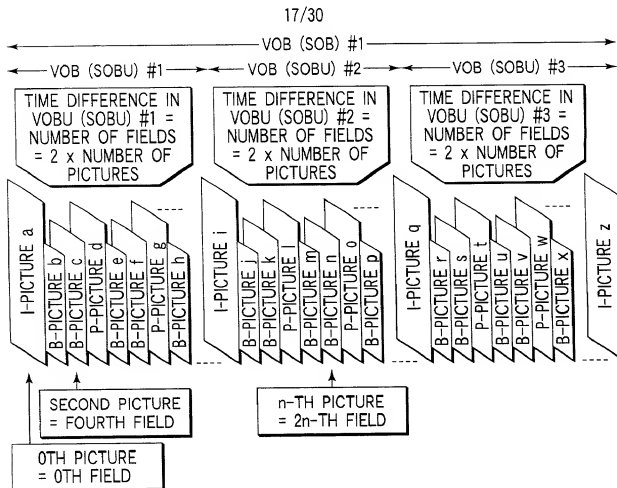


FIG. 18

INFORMATION OF ORIGINAL CELL #1 (SCI) (BEFORE PARTIAL OR TEMPORARY ERASE) 763	*****	*****
	CORRESPONDING VOB (SOB) 766	VOB (SOB) #1
	CORRESPONDING CELL START TIME (SC_S_APAT OR ERA_S_APAT) 753	= 0TH FIELD (TIME INFORMATION)
	CORRESPONDING CELL END TIME (SC_E_APAT OR ERA_E_APAT) 758	= 2(z-1)-TH FIELD (TIME INFORMATION)

FIG. 19

18/30

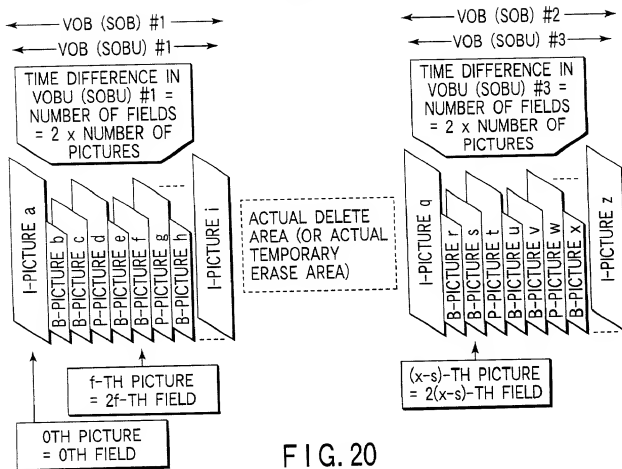


FIG. 20

INFORMATION OF ORIGINAL CELL #1 (SCI) (BEFORE PARTIAL OR TEMPORARY ERASE) 764
	CORRESPONDING VOB (SOB) 767	VOB (SOB) #1
	CORRESPONDING CELL START TIME (SC_S_APAT OR ERA_S_APAT) 753	= 0TH FIELD (TIME INFORMATION)
	CORRESPONDING CELL END TIME (SC_E_APAT OR ERA_E_APAT) 759	= 2f-TH FIELD (TIME INFORMATION)
INFORMATION OF ORIGINAL CELL #2 (SCI) (BEFORE PARTIAL OR TEMPORARY ERASE) 765
	CORRESPONDING VOB (SOB) 768	VOB (SOB) #2
	CORRESPONDING CELL START TIME (SC_S_APAT OR ERA_S_APAT) 754	= $2(s-q)$ -TH FIELD (TIME INFORMATION)
	CORRESPONDING CELL END TIME (SC_E_APAT OR ERA_E_APAT) 758	= $2(z-q)$ -TH FIELD (TIME INFORMATION)

FIG. 21

19/30

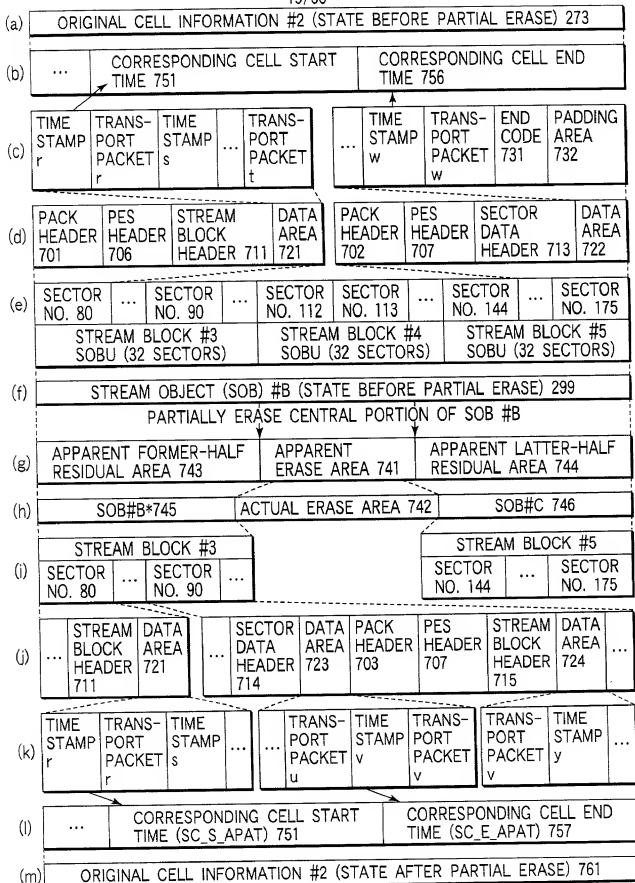


FIG. 22

20/30

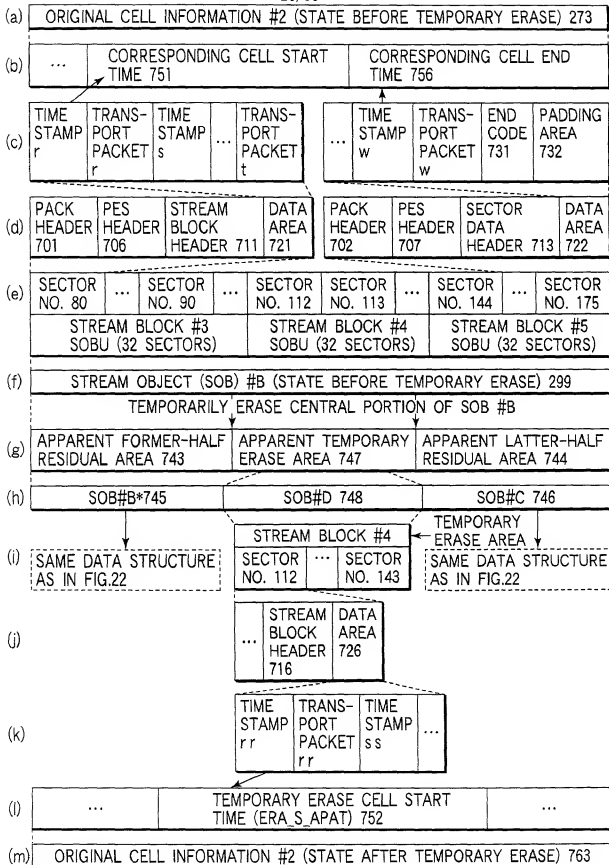


FIG. 23

21/30

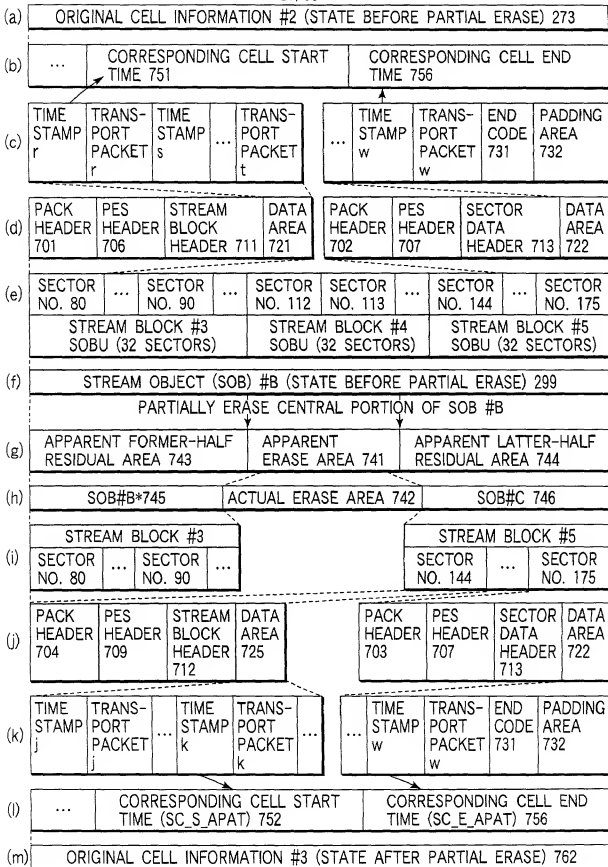


FIG. 24

22/30

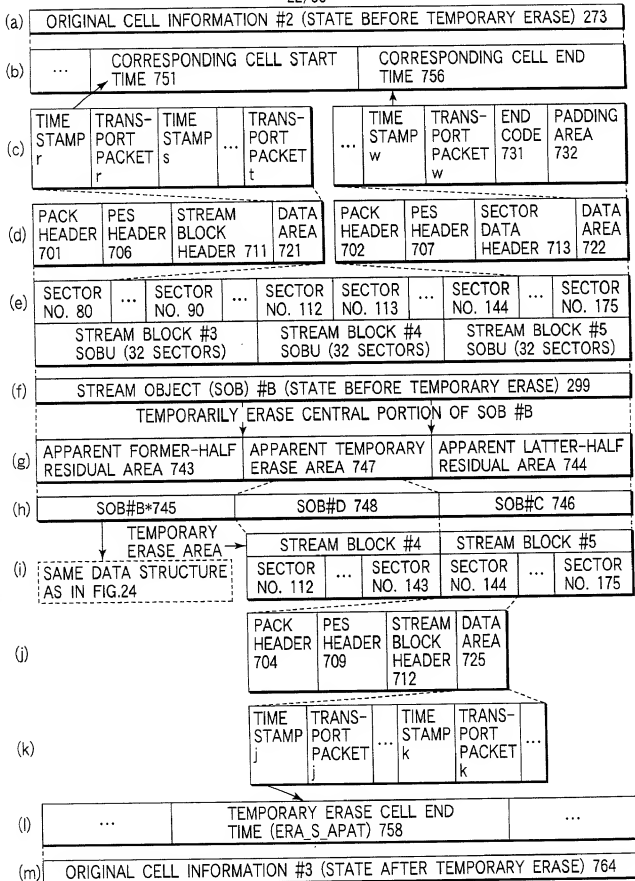


FIG. 25

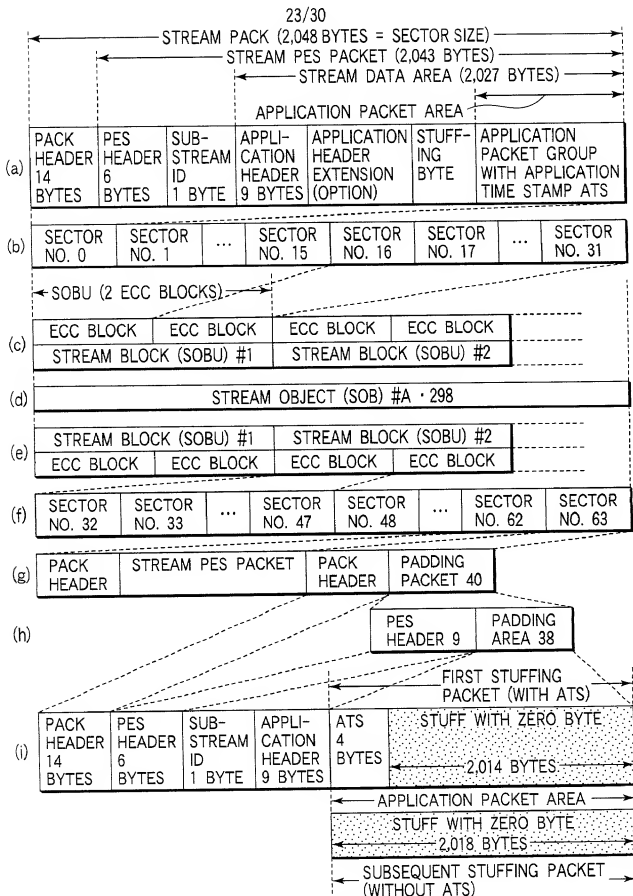


FIG. 26

24/30

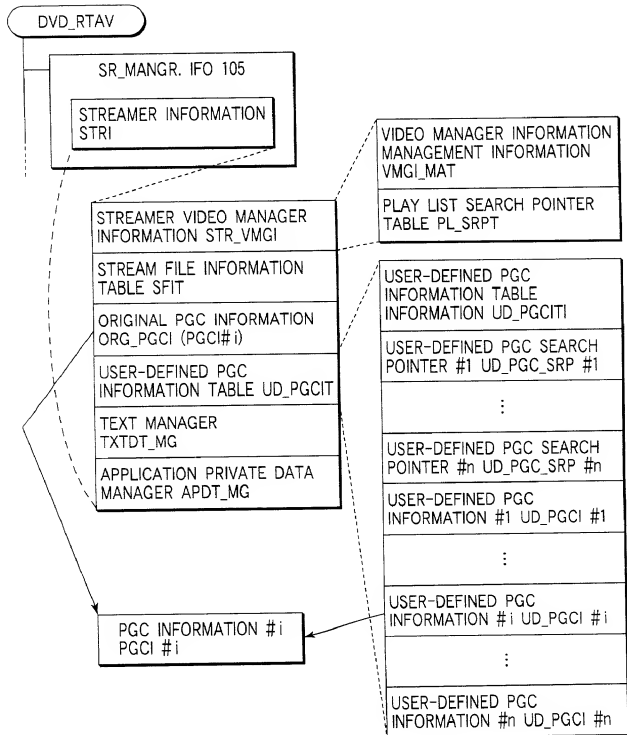


FIG. 27

25/30

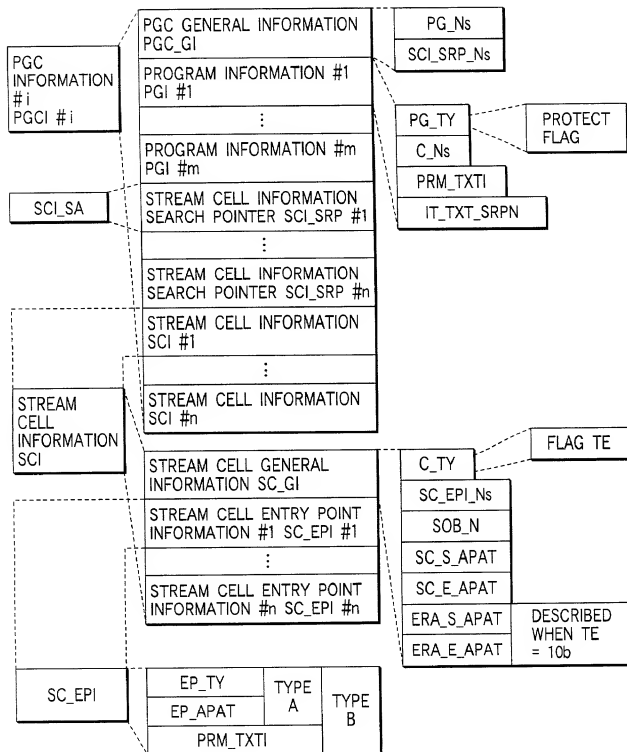
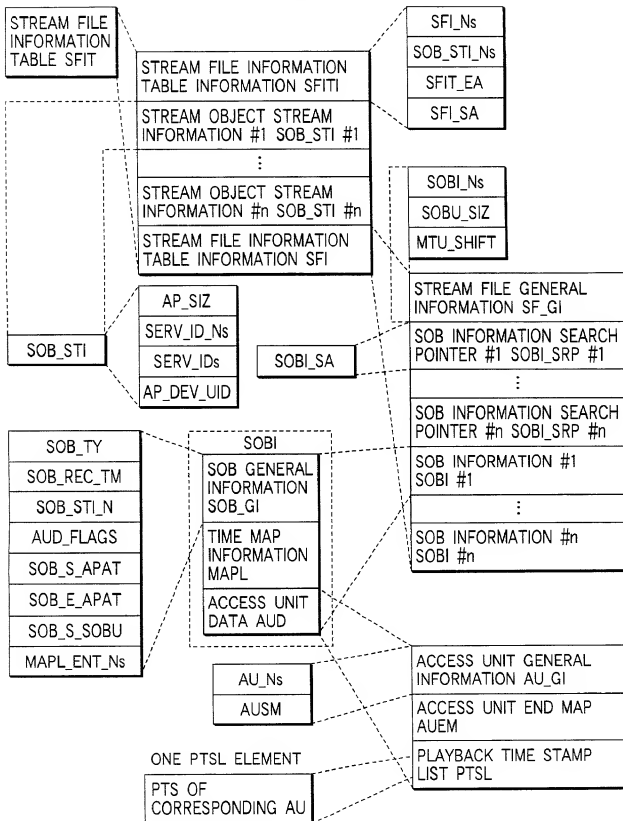


FIG. 28

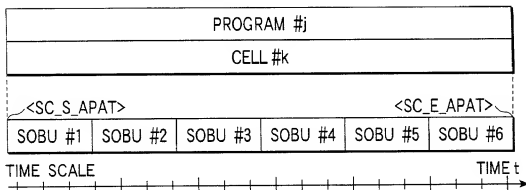


F | G. 29

27/30

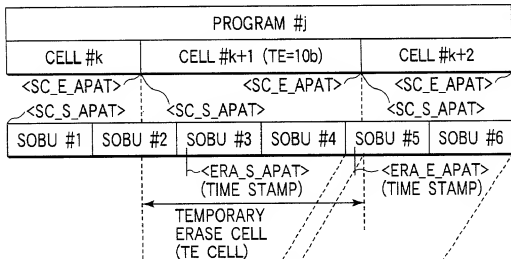
ORIGINAL
PROGRAM
(SOB#n)

(a)



AFTER
TEMPORARY
ERASE
(AFTER TE)

(b)



AFTER
COMPLETE
ERASE
(SOB#n AND
SOB#n+1)

(c)

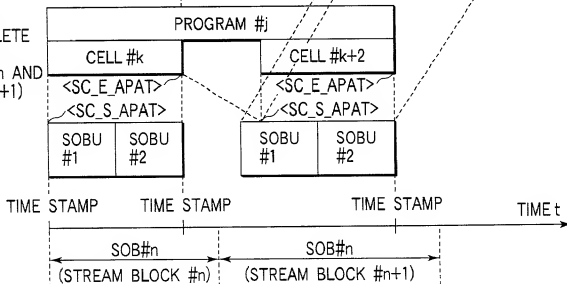


FIG. 30

28/30

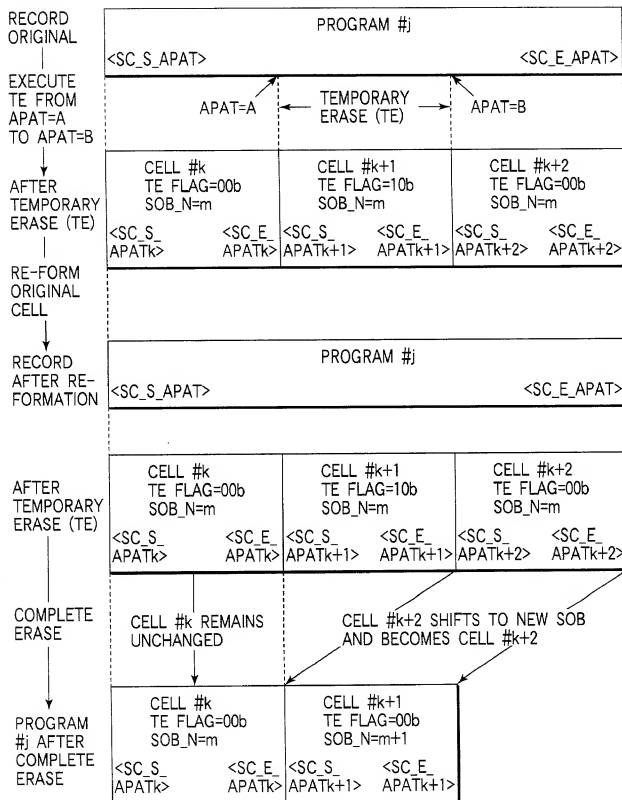


FIG. 31

29/30

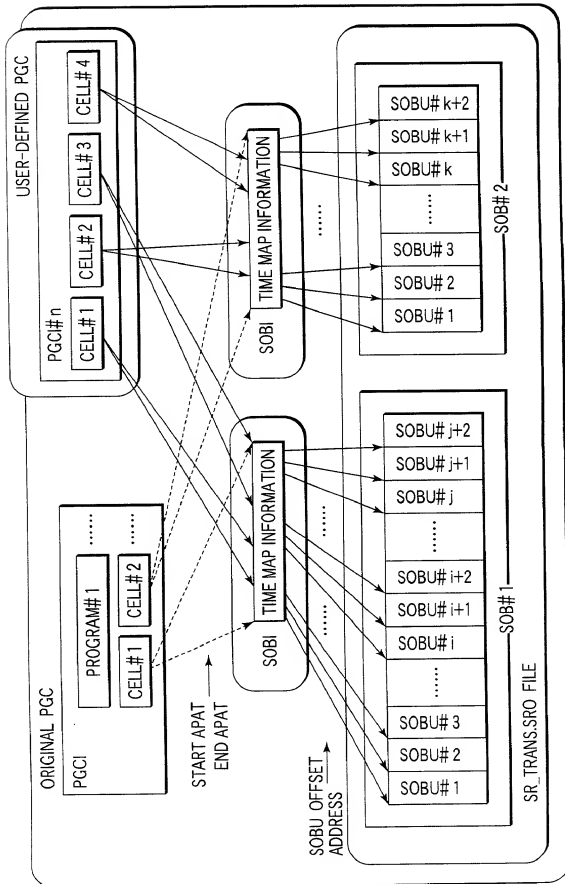


FIG. 32

30/30

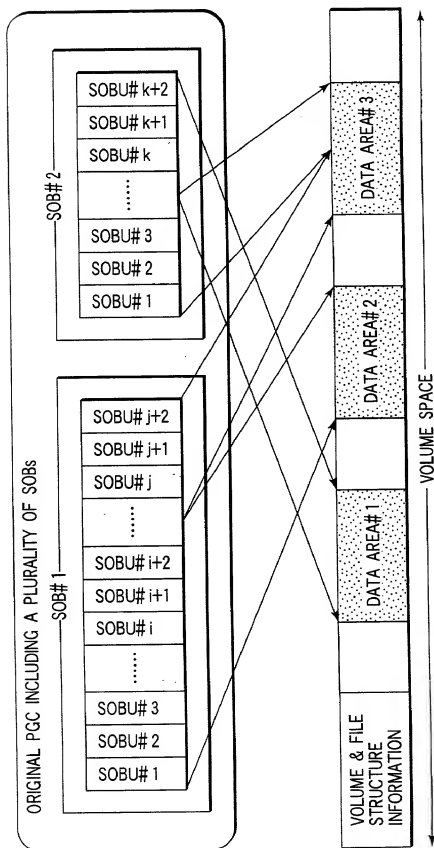


FIG. 33

DECLARATION FOR PATENT APPLICATION

(99S1048P)

As a below named inventor, I declare that my residence, post office address and citizenship are as stated below above my name; I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

STREAM DATA GENERATION METHOD AND PARTIAL ERASE
PROCESSING METHOD

the specification of which (check applicable box(es)).

[X] is attached hereto, the patent application of which was filed on February 7, 2000 as United States Application No. or PCT International Application No. PCT/JP00/00653, and was amended on (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 35 U.S.C. 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed:

Japanese Patent Application No. 11-028697, filed February 5, 1999

Priority Claimed

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s) or 35 U.S.C. 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

I hereby appoint as my attorneys, with full powers of substitution and revocation, to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: Norman F. Oblon (Reg. No. 24,618), Marvin J. Spivak (Reg. No. 24,913), C. Irvin McClelland (Reg. No. 21,124), Gregory J. Maier (Reg. No. 25,599), Arthur I. Neustadt (Reg. No. 24,854), Richard D. Kelly (Reg. No. 27,757), James D. Hamilton (Reg. No. 28,421), Eckhard H. Kuesters (Reg. No. 28,870), Robert T. Pous (Reg. No. 29,099), Charles L. Gholz (Reg. No. 26,395), Vincent J. Sunderdick (Reg. No. 29,004), William E. Beaumont (Reg. No. 30,996), Robert F. Gnuse (Reg. No. 27,295), Jean-Paul Lavalleye (Reg. No. 31,451), Stephen G. Baxter (Reg. No. 32,884), Robert W. Hahl (Reg. No. 33,893), Richard L. Treanor (Reg. No. 36,379), Steven P. Weihrouch (Reg. No. 32,829), John T. Goolkasian (Reg. No. 26,142), Richard L. Chinn (Reg. No. 34,305), Steven E. Lipman (Reg. No. 30,011), Carl E. Schlier (Reg. No. 34,426), James J. Kulbaski (Reg. No. 34,648), Richard A. Neifeld (Reg. No. 35,299), J. Derek Mason (Reg. No. 35,270), Surinder Sachar (Reg. No. 34,423), Christina M. Gadiano (Reg. No. 37,628), Jeffrey B. McIntyre (Reg. No. 36,867), Paul E. Rauch (Reg. No. 38,591), William T. Enos (Reg. No. 33,128) and Michael E. McCabe, Jr. (Reg. No. 37,182), each of whose address is Fourth Floor, 1755 Jefferson Davis Highway, Arlington, Virginia 22202, or any one of them, and request that correspondence be directed to Oblon, Spivak, McClelland, Maier & Neustadt, P.C., Fourth Floor, 1755 Jefferson Davis Highway, Arlington, Virginia 22202.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.